

MOVEMENTS OF COCCINELLIDAE.

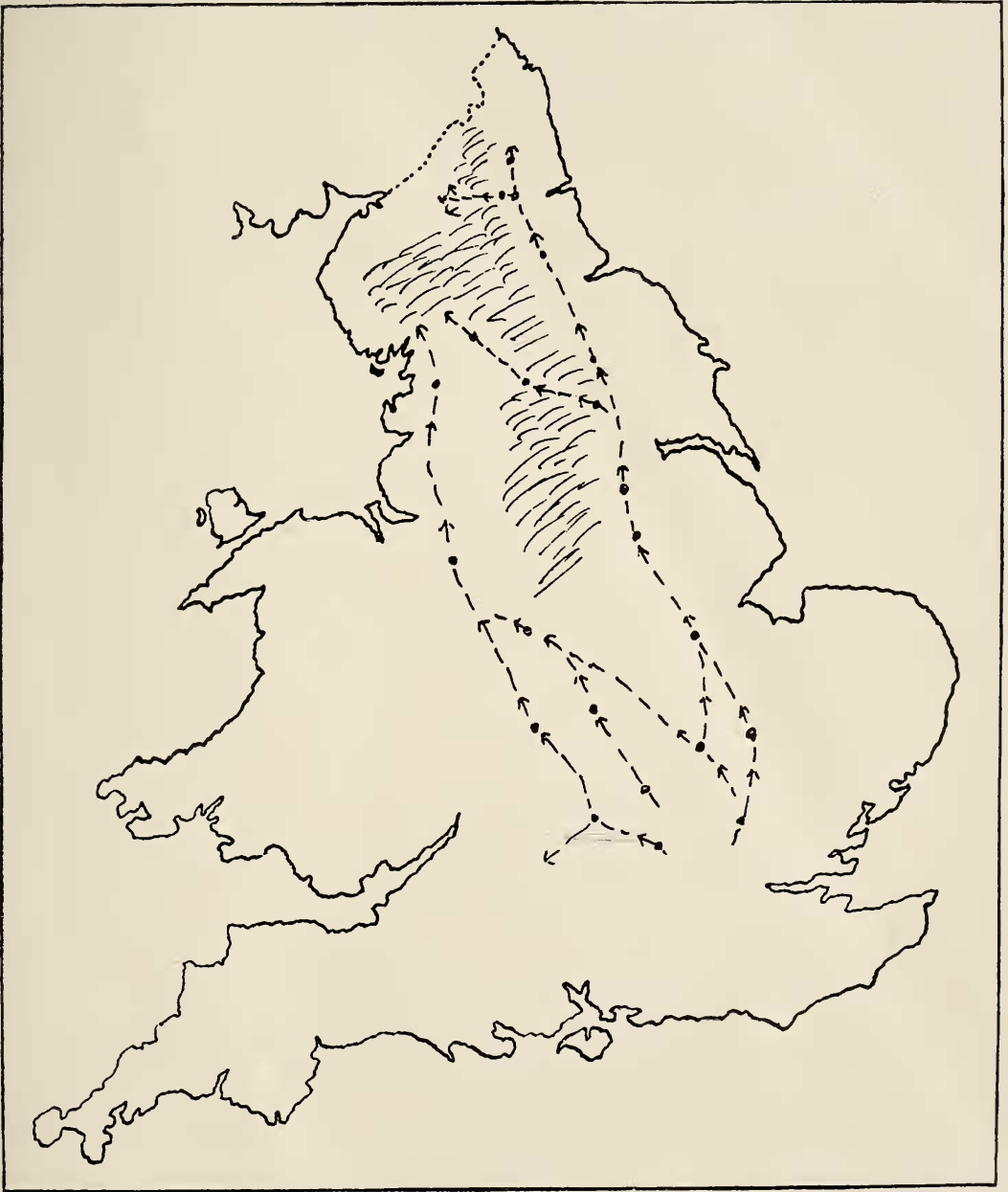
By T. F. MARRINER.

(Plate VIII.)

Inclement weather and a chill kept me indoors for the early weeks of 1939. I spent part of my time in going through some old note books and, coming across some unpublished though incomplete notes on movements of Coccinellidae, I gathered them for the purpose of this short article.

Three terms are applied to such movements: migration, swarming, and massing. These terms, I find, are sometimes but loosely made use of and in these notes I apply "migration" to movements from one country to another; "swarming" to movements from one area of a country to another area of the same country; and "massing" to the gathering of the insects in an area to some spot in that area.

Working with these meanings the only member of the British *Coccinellidae* I can discover as migrating is *Adalia bipunctata*, L. This species, as has long been known, migrates periodically from France. There is a record of such a migration in 1869, when the streets of London swarmed with the species. There is also a record of a migration when the numbers alarmed the citizens of Reading. Another migration occurred in 1872 and was noted to the west of Middlesbrough, where the crowd took a few days to pass on north. I have, myself, observed two of these migratory crowds, in each case passing east to west through the Tyne Gap in the Pennines, and it was in the case of the second of these migrations that the accompanying map was compiled. I had gone into the station at Carlisle to take train to Hexham in June 1925. When the train arrived from Newcastle I was on the platform near where the engine stopped and noticed a number of *A. bipunctata* on the engine and first coach. The train fireman noticed me looking at them and volunteered the information that they had come through crowds of them between Hexham and Carlisle. When the train drew up at Heads Nook station I saw my friend the late Mr G. B. Routledge on the platform. He came up when I put out my head and shouted, "Have you seen the two-spots, hundreds of 'em?" At Hexham I went to a market garden and found the place overrun with them and was told that there were none to be seen there the day before. On my return home I went to see Mr Routledge, and between us we wrote to some 80 people asking about ladybirds. We got some 50 replies and from these the map was compiled. It shows the route but unfortunately we were unable to add the timing from such replies as "the other day," "last week," "last Wednesday or Thursday," etc. Most of our correspondents were not scientific. From data gathered here and elsewhere I noted that *A. bipunctata* appears always to fly low, keeping not far above the ground and passing through gaps rather than rising to pass high land. This agrees with the point that many are caught by high waves when crossing the Strait of Dover or the Channel and are washed up on our south east coast. It will be noted on the map that the route avoids the Peak, and that gaps are made use of. Hereford was not touched and this is, I believe, usual, for I have an old letter from a friend who states that when he lived



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MIGRATION OF ADALIA BIPUNCTATA, 1925.

Dots show observation points.

